

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:*1. (Currently amended)*

A method of bonding a metallic membrane with a metallic part comprising:
directly physically contacting a smooth surface of a metallic membrane comprising palladium against a smooth surface of the metallic part without any intervening material being present between the two contacting surfaces and mechanically pressing the metallic membrane and the metallic part together at a pressure in the range of about 1,000 psig to about 3,000 psig;

heating the directly physically contacting metallic membrane comprising palladium and the metallic part to a temperature above the half melting point of the metallic membrane while subjecting the metallic membrane and metallic part to a controlled environment of a reducing gas atmosphere.

*2. (Cancelled)**3. (Cancelled)**4. (Original)*

The method of claim 1 wherein the heating to a temperature above the half melting point is to a temperature between 450°C and 1100°C.

*5. (Cancelled)**6. (Cancelled)**7. (Original)*

The method of claim 1 wherein the metallic membrane is 75%/wt Pd-25%/wt Ag alloy.

8. (Original)

The method of claim 1 wherein the metallic membrane is Pd-Ru alloy.

9. *(Cancelled)*

10. *(Cancelled)*

11. *(Previously presented)*

The method of claim 1 wherein the mechanical pressing, the heating and the subjecting to a reducing gas atmosphere are carried out for about 24 hours.

12. *(Previously presented)*

The method of claim 1 wherein the mechanical pressing, the heating and the subjecting to a reducing gas atmosphere are carried out for about 30 hours.

13. *(Cancelled)*

14. *(Cancelled)*

15. *(Cancelled)*

16. *(Cancelled)*

17. *(Previously presented)*

The method of claim 1 further comprising:
polishing the surface of the metallic membrane; and
polishing the surface of the metallic part prior to the mechanical pressing.

18. *(Currently amended)*

The method of claim 1 wherein the reducing gas is hydrogen is at a pressure of 15 psig.